

REMARKS

Claims 1-55 are pending in the application. Claims 1-55 were rejected. Claims 7 and 47 were objected to. Claims 7, 43, 44, 47, 54, and 55 are amended. Claim 1 is the independent claim. Reconsideration of the amended application is respectfully requested.

The examiner provided guidelines setting forth the preferred layout for the specification of a utility patent application, and suggested their use by the applicants. The written description is amended accordingly.

The examiner objected to the disclosure because of a noted informality. The written description is amended to correct the informality. The objection, therefore, should be withdrawn.

The examiner required a clean copy of the specification. A clean, true copy of the specification is submitted with this response.

The examiner objected to claims 7 and 47 because of certain noted informalities. Claims 7 and 47 are amended to correct the informalities only, and are not amended to overcome prior art. The objection, therefore, should be withdrawn.

The examiner rejected claims 1-55 under 35 USC §112, first paragraph, as failing to comply with the written description requirement by claiming subject matter that is not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors had possession of the claimed invention. In particular, the examiner stated that the specification is deficient in conveying the meaning of the term “intrinsic movements”. For example, the examiner stated that it is not understood from the teachings of the specification how a pattern of the eyes or nose is intrinsic to an individual. The examiner further asserted that the applicants have not disclosed in the

specification which patterns in the eye or nose regions are intrinsic to an individual or how they can be accurately measured using a CCD camera.

It is respectfully pointed out that the relevant aspect of the claimed invention is intrinsic movements, and not intrinsic patterns. "Intrinsic movements," as a term of art, means insignificant movements that are made unconsciously by a subject, such as movements in the cheek and eye areas common during facial relaxation when, for example, posing while an image is captured. As another example, certain areas of the face make small movements when a subject is breathing. These movements are not significant in that they are not intended as expression, but are intrinsic, characteristic movements that can be discerned when comparing details of sequential frames of video image of the subject.

This concept is advantageously utilized by the process of the invention as described and claimed in the specification. For example, claim 1 recites the steps of recording a sequence of consecutive individual images of a person, and determining the authenticity of the recorded image in at least two consecutive images if intrinsic movements are detected. The advantage of detecting such movements in consecutive images is also described in the specification, for example, in the passage spanning page 2, line 23 through page 3, line 5. Use of detected intrinsic movements between consecutive images in part overcomes deficiencies of prior art systems that can produce false positive authentication of images as read from a person in response to reading, for example, cylindrically bent images or three-dimensional masks, as described in the background section of the specification.

In view of the foregoing, it is respectfully submitted that the term of art “intrinsic movements” is described in the specification in a manner that is adequate under 35 USC §112, first paragraph. The rejection of claims 1-55, therefore, should be withdrawn.

The examiner rejected claims 7, 8, 43, 44, 54, and 55 under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that the applicants regard as the invention. Several informalities were noted as bases for this rejection. The claims are amended to correct these informalities only, and are not amended to overcome prior art. The rejection of claims 7, 8, 43, 44, 54, and 55, therefore, should be withdrawn.

The examiner rejected claims 1, 17, 18, 22, 27, and 28 under 35 USC §102(e) as being anticipated by Wagner et al. The examiner also rejected claims 2-16, 19-21, 23-26, 29-35, 37, 38, and 40-55 under 35 USC §103(a) as being unpatentable over Wagner et al., in view of various groupings of the teachings of Badiqué, Matsunaga, Dunton et al., Ueno et al., Russ, Prasad, Moeller et al., and well-known prior art. Claims 36 and 39 were not rejected in view of prior art.

Independent claim 1 recites a method for verifying the authenticity of an image recorded in a person identifying process and belonging to a person to be identified. According to the claimed method, a sequence of consecutive individual images of the person is recorded. The authenticity of the recorded image is determined if in at least two consecutive individual images of the sequence intrinsic movements are detected.

In the examiner’s main reference, Wagner et al. describe person identification based on movement information. Wagner et al. use a high-speed camera to record a subject individual as he/she performs a typical or predetermined movement action.

Examples of typical movements are walking movements and head movements (column 1, lines 60-61). Examples of predetermined movement actions are face movements (lineaments) resulting from speaking a predetermined word or sentence (column 1, lines 61-64). In contrast to the claimed invention, Wagner et al. do not analyze or in any way use data resulting from intrinsic movements of the subject person.

In the preferred embodiment, Wagner et al. have the subject person speak a predetermined word or sentence while a sequence of images is recorded. The flow of facial mimicry (lineaments) is recorded and compared to stored lineaments of authorized individuals. When a match between the newly-recorded lineaments and the stored lineaments is found, the subject person is identified. See column 4, lines 16-33. Wagner et al. do not describe detecting movement between two consecutive recorded images of the subject person to authenticate the recorded image, as recited in claim 1.

That is, claim 1 requires recording a sequence of images of a subject person, and detecting intrinsic movement between two or more of these recorded images in order to authenticate the recorded image. In contrast, Wagner et al. record a sequence of images of a subject person, calculate a flow of the predetermined movements of the recorded images, and compare this calculation to data in a database for the purpose of identifying the subject person. Thus, the applicants and Wagner et al. have different goals and use different processes. The applicants authenticate recorded images, for example, to ensure that what is being recorded is an actual image of a subject person and is not a facsimile. Wagner et al. are not concerned with authenticating the image, but rather with matching the subject person data with stored data for identification purposes. The applicants use intrinsic movement for this purpose, that is, movement that is unconscious and therefore

can be captured without notice of the subject person. Wagner et al. use predetermined, directed movements, that is, movements that are made only with the cooperation of the subject person.

The examiner asserted that Wagner et al. illustrate in Fig. 2 that five consecutive individual images are used to determine authenticity. However, as explained by Wagner et al. at column 1, line 66 through column 2, line 2, Fig. 2 merely shows a schematic representation of an individual and that person's predetermined movement action of lineaments. Predetermined movement actions are, by definition, not intrinsic movement actions. The two paragraphs following the description above describe that recorded data is compared to stored data for identification, and not that movement between consecutive recorded images is detected to determine authenticity. Wagner et al. acknowledge that movement occurs between frames of the recorded image, but don't base any evaluation on the existence of the movement itself, in contrast to the claimed invention.

In view of the foregoing, it is submitted that Wagner et al. do not anticipate the invention as recited in claims 1, 17, 18, 22, 27, and 28. The rejection of these claims, therefore, should be withdrawn. Further, Wagner et al. fails as a main reference for the obviousness rejections asserted by the examiner for at least the reasons noted above, and the secondary references do not compensate for the noted deficiencies of Wagner et al. Therefore, no combination of the teachings of the cited references could render obvious the claimed invention. Therefore, all rejections based on prior art should be withdrawn.

Based on the foregoing, it is submitted that all objections and rejections have been overcome. It is therefore requested that the Amendment be entered, the claims allowed, and the case passed to issue.

Respectfully submitted,

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Date



Thomas M. Champagne
Registration No. 36,478
IP STRATEGIES
12 ½ Wall Street
Suite I
Asheville, North Carolina 28805
828.253.8600
828.253.8620 fax

TMC:hlp